CLAIMS

1. An injectable micro-implantation system for filling bodily defects including the augmentation of soft tissue, comprising in combination:

an amount of biologically compatible micro particles dispersed in a compatible physiological vehicle, the micro particles being further characterized by a textured surface having a plurality of surface irregularities generally randomly formed therein;

the textured micro particles having a combination of average particle size range and average particle texture which cooperate to substantially prevent loss of the prosthetic particles from the injection site.

2. An injectable micro-implantation system for filling bodily defects including the augmentation of soft tissue, comprising in combination:

biologically inert micro particles of a relatively malleable material dispersed in a compatible physiological vehicle, the micro particles being further characterized by a textured surface having a plurality of indentations, cavities and pores generally randomly formed therein;

the textured micro particles having an average particle size generally between 30 and 3000 microns with the dimension of the openings formed by the indentations, cavities and pores within the particles being generally in a range between 10 angstroms and 500 microns;

the relative average particle size range and average dimensions of the openings formed by the indentations, cavities and pores being sufficient in combination to

substantially preclude migration of the particles from the injection site.

3. The injectable micro-implantation system of Claim 2 further comprising an amount of at least one surface modifier to assist in detoxification and/or promote tissue ingrowth.

4. The injectable micro-implantation system of Claim 3 wherein the surface modifier is incorporated into the micro particle prior to particle formation.

5. The injectable micro-implantation system of Claim 3 wherein said surface modifier is selected from the group consisting of polyvinyl pyrrolidone, collagen and an hyaluronate.

6. The injectable micro-implantation system of Claim 2 being particularly characterized in that the compatible physiological vehicle is a bodily compatible fluid selected from the group consisting of hydrogels, glucose, starch, silicone fluid fat and a lower hyaluronate.

7. The injectable micro-implantation system of Claim 2 being particularly characterized in that the biologically inert micro particles are formed of bodily compatible solids selected from the group consisting of silicone rubbers, polytetrafluoroethylene, polyethylene, and other biologically inert polymer materials.

8. The injectable micro-implantation system of Claim 7 being particularly characterized in that the biologically inert micro particles are of a generally uniform configuration.

9. The injectable micro-implantation system of Claim 8 being particularly characterized in that the average particle sizes is at least 80 microns.

10. The injectable micro-implantation system of Claim 8 being particularly characterized in that the range of average particle size is between 60 microns and 600 microns.

11. The injectable micro-implantation system of Claim 8 being particularly characterized in that the range of average particle size is between 100 microns to 600 microns.

12. The injectable micro-implantation system of Claim 8 further characterized in that the relatively malleable material is poly(dimethylsiloxane) and the physiological vehicle is a hydrogel of polyvinyl pyrrolidone.

13. The injectable micro-implantation system of Claim 9 further characterized by microparticles having a textured surface of indentations, cavities and pores of an average size between about 10 and about 200 microns.

14. The injectable micro-implantation system of Claim 10 further characterized by microparticles having a textured surface of indentations, cavities and pores of an average size between about 10 and about 200 microns.

15. The injectable micro-implantation system of Claim 11 further characterized by microparticles having a textured surface of indentations, cavities and pores of an average size between about 10 and about 200 microns.

16. The injectable micro-implantation system of Claim 10 further characterized in that the relatively malleable material is poly(dimethylsiloxane) and the physiological vehicle is a hydrogel of polyvinyl pyrrolidone.

17. The injectable micro-implantation system of Claim 8 particularly characterized in that:

the relatively malleable material is poly(dimethylsiloxane);

the physiological vehicle is a hydrogel of polyvinyl pyrrolidone;

the range of average particle size is between 60 microns and 600 microns; and

microparticles have a textured surface of indentations, cavities and pores of an average size between about 10 and about 200 microns.

18. The injectable micro-implantation system of Claim 8 particularly characterized in that:

the relatively malleable material is poly(dimethylsiloxane);

the physiological vehicle is a hydrogel of polyvinyl pyrrolidone;

the range of average particle size is between 100 microns and 600 microns; and

microparticles having a textured surface of indentations, cavities and pores of an average size between about 10 and about 200 microns.

19. The injectable micro-implantation system of Claim 8 wherein the micro particles are generally spherical in shape.

20. The injectable micro-implantation system of Claim 2 being particularly characterized in that the biologically inert micro particles are of a generally uniform configuration.

21. The injectable micro-implantation system of Claim 13 wherein the micro particles are generally spherical in shape.

22. The injectable micro-implantation system of Claim 14 wherein the micro particles are generally spherical in shape.

23. The injectable micro-implantation system of Claim 15 wherein the micro particles are generally spherical in shape.

24. The injectable micro-implantation system of Claim 17 wherein the micro particles are generally spherical in shape.

25. The injectable micro-implantation system of Claim 18 wherein the micro particles are generally spherical in shape.

26. A non-migratory injectable micro-implantation system for the filling of bodily defects including long-term augmentation of soft tissue, comprising in combination:

biologically inert micro particles dispersed in a compatible physiological vehicle, the micro particles being further characterized by a textured surface having a plurality of surface irregularities generally randomly formed therein;

the textured micro particles having an average particle size and texture combination range and average particle texture such that migration from the injection site is substantially precluded and individual particle non-inflammatory scar tissue encapsulation occurs.

27. An injectable micro-implantation system for filling bodily defects including the augmentation of soft tissue, comprising in combination:

biologically inert micro particles of a relatively malleable material dispersed in a compatible physiological vehicle, the micro particles being of a generally uniform configuration and being further characterized by a textured surface having a plurality of indentations, cavities and pores separated by connective members generally randomly formed therein;

the textured micro particles having an average particle size generally between 30 and 3000 microns with the dimension of the openings formed by the indentations, cavities and pores within the particles being generally in a range between 10 angstroms and 500 microns; and

the relative average particle size range and average dimensions of the openings formed by the indentations, cavities and pores being sufficient in combination to

substantially preclude migration of the particles from the injection site and to achieve adequate guidance of fibroblasts such that a scar tissue pattern is developed that assumes a configuration that is generally a mirror image of the particle surface.

28. A method of substantially preventing transitory host/prostheses interface motion of the particulate matter in an injectable micro-particle implantation system for filling bodily defects including the augmentation of soft tissue comprising the step of:

subcutaneously injecting an amount of the textured micro particles further characterized by a textured surface having a plurality of indentations, cavities and pores and having an average particle size generally between 30 and 3000 microns with the dimension of the openings formed by the indentations, cavities and pores within the particles being generally in a range between 10 angstroms and 500 microns; and the relative average particle size range and average dimensions of the openings formed by the indentations, cavities and pores being sufficient in combination to substantially preclude migration of the particles from the injection site.

29. The method of Claim 28 further comprising the step of adding a biologically active surface modifier to the injected material either as separate material or integal with the particles.

30. An injectable micro-implantation system for filling defects in bodily tissues including augmentation of soft tissue, comprising in combination:

biologically inert micro particles dispersed in a compatible physiological vehicle, the micro particles characterized

by a textured surface having a plurality of indentations, cavities and pores separated by outwardly projecting connective members generally randomly formed therein;

the textured micro particles further being characterized by an average particle size generally between 30 and 3000 microns and with the dimension of the openings formed by the indentations, cavities and pores within the particles being generally between 10 Angstroms and 500 microns; and

the relative average particle size range and average dimensions of the openings formed by the indentations, cavities and pores being sufficient in combination to substantially preclude migration of the particles from the injection site.

31. The injectable micro-implantation system of Claim 30 being particularly characterized in that the compatible physiological vehicle is a bodily compatible fluid selected from the group consisting of hydrogels, glucose, starch, silicone fluid fat and lower hyaluronates.

32. The injectable micro-implantation system of Claim 30 being particularly characterized in that the biologically inert micro particles are formed of bodily compatible solids selected from the group consisting of silicone rubbers, polytetrafluoroethylene, polyethylene, and other biologically inert polymer materials.

33. The injectable micro-implantation system of Claim 30 being particularly characterized in its biologically inert micro particles are of a generally uniform configuration.

34. The injectable micro-implantation system of Claim 30 wherein the surface irregularities in the biologically inert micro particles are generally between 10 and 200 microns.

35. An injectable micro-implantation system for filling defects in bodily tissue including augmentation of soft tissue, comprising in combination:

biologically inert relatively malleable micro particles of a generally uniform configuration dispersed in a compatible physiological vehicle, consisting essentially of a bodily compatible fluid selected from the group consisting of glucose, starch, silicone fluid, fat and a lower hyaluronate, the micro particles being characterized by a textured surface having a plurality of indentations, cavities and pores separated by outwardly projecting connective members generally randomly formed therein, wherein the biologically inert micro particles are formed of bodily compatible solids selected from the group consisting of silicone rubbers, polytetrafluoroethylene, polyethylene, and other biologically inert polymer materials; and

the textured micro particles further being characterized by an average particle size generally between 60 and 600 microns and with the dimension of the surface irregularities formed by the indentations, cavities and pores within the particles being generally between 20 Angstroms and 200 microns.

36. The injectable micro-implantation system of Claim 30 further comprising at least one surface modifier to assist in detoxification and/or promote tissue ingrowth.

37. The injectable micro-implantation system of Claim 36 wherein the surface modifier is dispersed in the physiological vehicle.

38. The injectable micro-implantation system of Claim 36 wherein the surface modifier is biologically active.

39. The injectable micro-implantation system of Claim 37 wherein the surface modifier is biologically active.

40. The injectable micro-implantation system of Claim 38 wherein the modifier is selected from the group consisting of fibronectin and cytokines.

41. The injectable micro-implantation system of Claim 36 wherein said surface modifier is selected from the group consisting of polyvinyl pyrrolidone, collagen and an hyaluronate.

42. The injectable micro-implantation system of Claim 35 further comprising at least one surface modifier to assist in detoxification and promote tissue ingrowth.

43. The injectable micro-implantation system of Claim 41 wherein said surface modifier is selected from the group consisting of polyvinyl pyrrolidone, collagen and an hyaluronate.

44. The injectable micro-implantation system of Claim 31 wherein said surface modifier is selected from the group consisting of polyvinyl pyrrolidone, collagen and an hyaluronate.

45. The injectable micro-implantation system of Claim 32 wherein said surface modifier is selected from the group consisting of polyvinyl pyrrolidone, collagen and an hyaluronate.

46. The injectable micro-implantation system of Claim 3 wherein the surface modifier is dispersed in the physiological vehicle.

47. The injectable micro-implantation system of Claim 3 wherein the surface modifier is biologically active.

48. The injectable micro-implantation system of Claim 46 wherein the surface modifier is biologically active.

49. The injectable micro-implantation system of Claim 48 wherein the modifier is selected from the group consisting of fibronectin and cytokines.

50. The injectable micro-implantation system of Claim 3 wherein the modifier is selected from the group consisting of fibronectin and cytokines.